



AGTSR

TRANSITION PROCESS

ATS to HEET

Lawrence P. Golan, Director
Richard A. Wenglarz, Program Manager

BASIC QUESTION:



WHEN?

Latest Word –

“NO LATER THAN 28 FEBRUARY 2002”

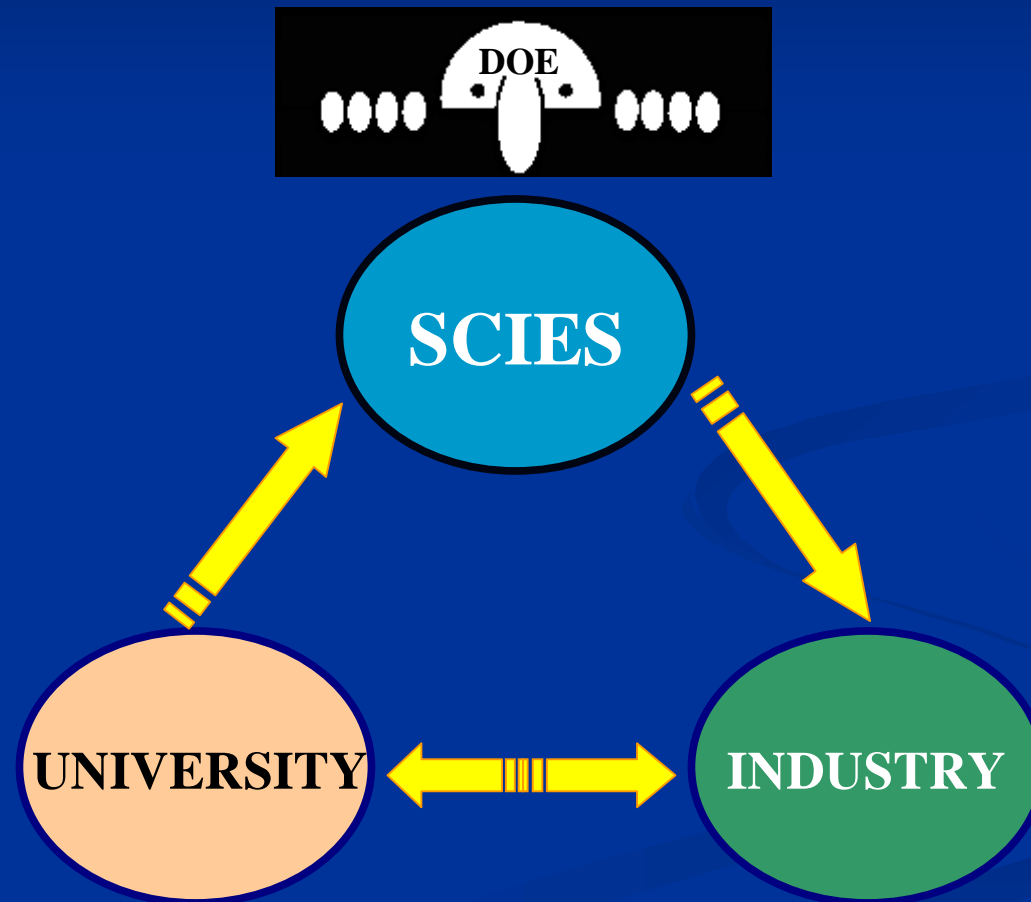
AGTSR PROGRAM MISSION

Engage universities to help ensure the long term health of the U.S. advanced turbine manufacturing industry.

Engage industry to help direct university research in a manner respectful of a university's mission (learning at the highest level).

AGTSR PROGRAM

Dynamic, Flexible Partnership of
Government, Industry and Universities



AGTSR ACTIVITIES

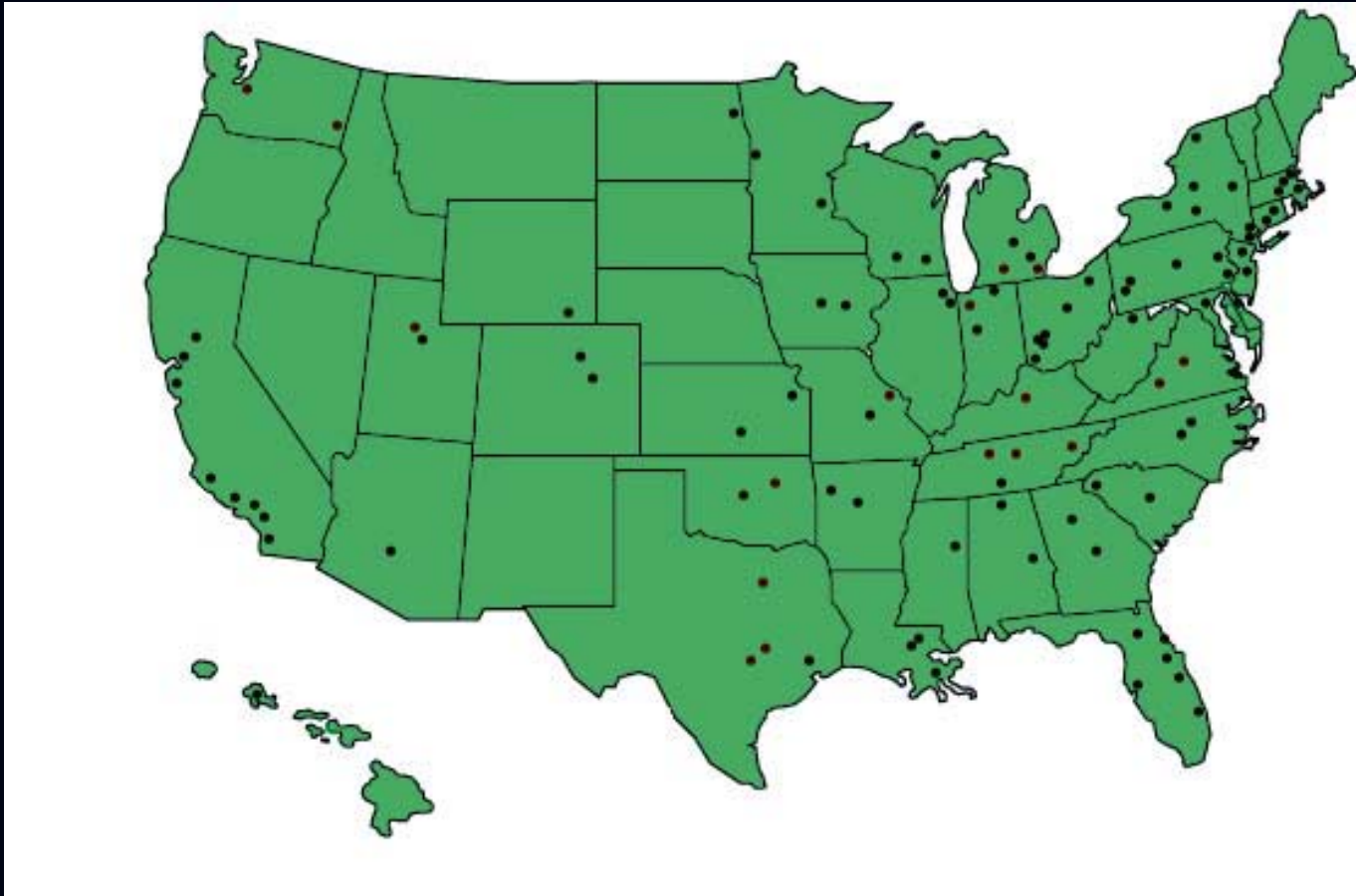
- **RFP/Research Projects (75 awarded)**
 - One RFP/yr, usually in spring
 - Ongoing projects (30 in progress)
 - Combustion, aero/heat transfer, and materials
- **Workshops/meetings**
 - Tech. reviews of projects/identify research (16 to date)
 - DOE/ATS reviews and specialty meetings
- **Industry Internships (78 to date)**
- **Faculty Fellowships (9 to date)**

ATS vs. HEET

	ATS	HEET
System Efficiency	60% Utility	60% coal based HHV, 75% natural gas
Fuel	Natural Gas	Coal-Syn Gas Hydrogen Natural Gas
Emissions	Single Digit	Near Zero
Life Cycle Cost	10% Cost of Electricity	Reduce 15%

EXPAND PERFORMING MEMBER BASE

AGTSR PERFORMING MEMBERS



EXPAND INDUSTRIAL REVIEW BOARD

PARTICIPATING REVIEW BOARD

VOTING MEMBERS

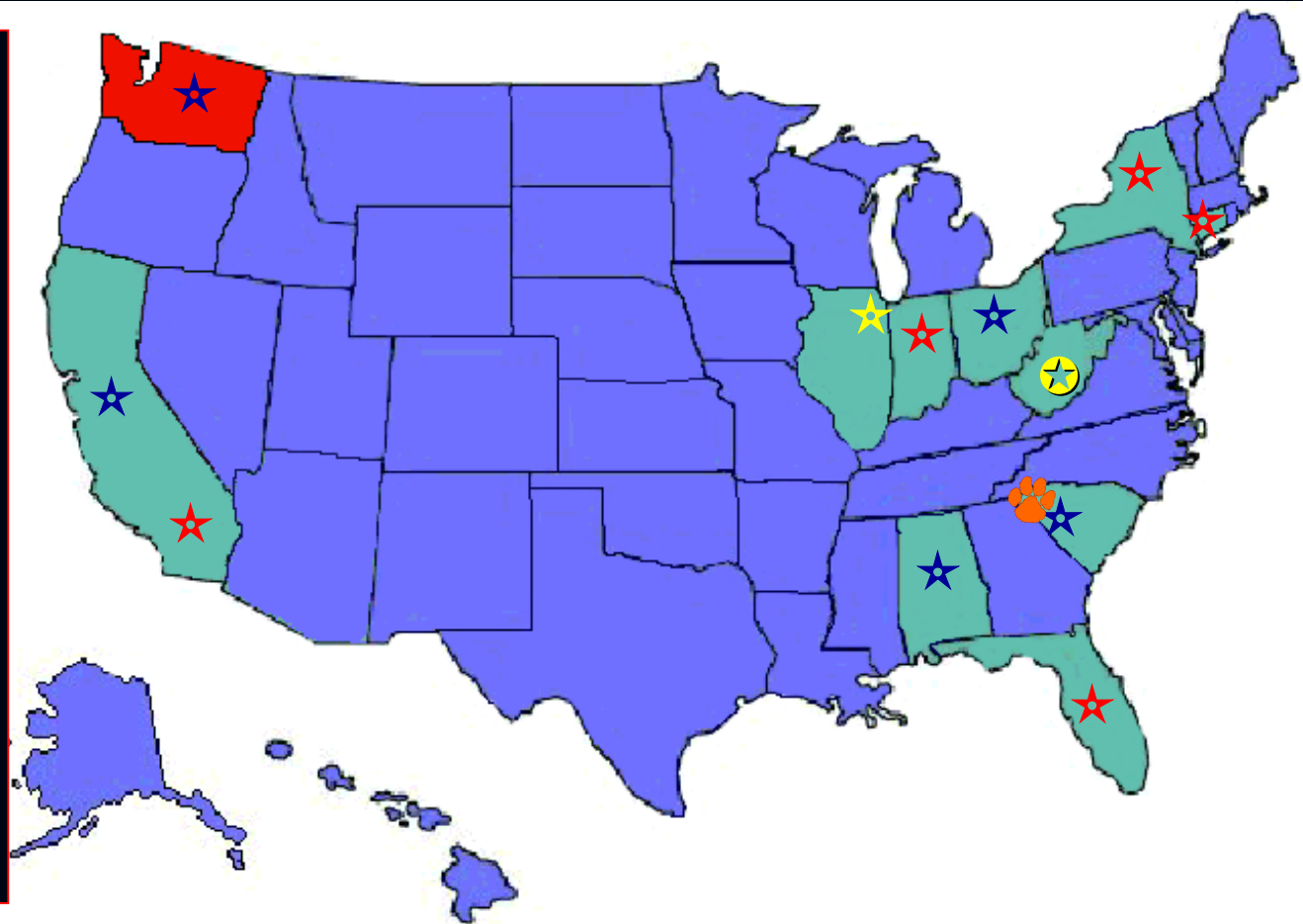
General Electric
Pratt & Whitney
Rolls Royce
Siemens Westinghouse
Solar Turbines

ASSOCIATE MEMBERS

EPRI
Parker Hannifin
Ramgen Power
Southern Company
Woodward FST

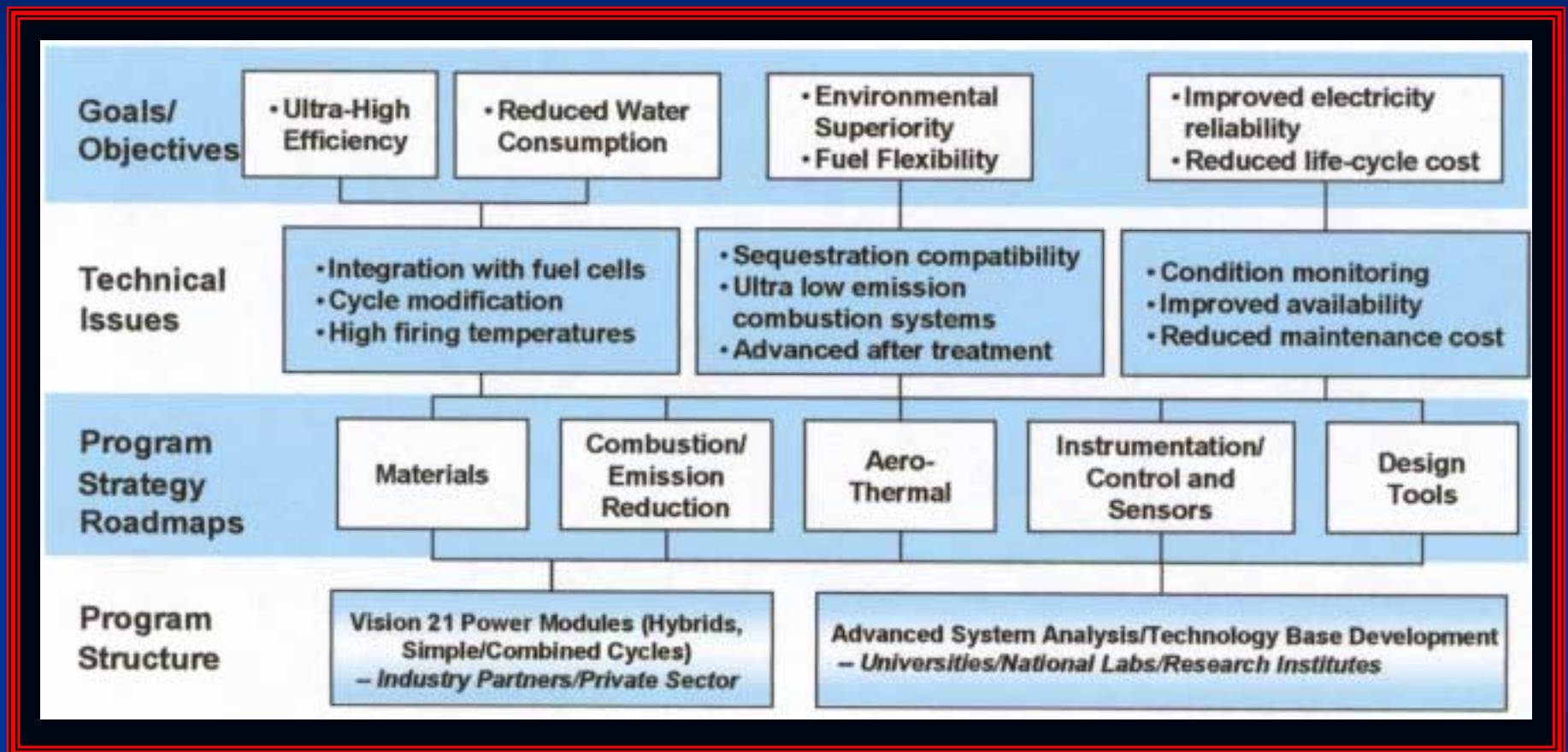
ADVISORS

DOE/NETL
GTI



GENERAL FOCUS OF AGTSR RESEARCH AREAS

COMBUSTION RESEARCH	MATERIALS RESEARCH	AERO-HEAT TRANSFER RESEARCH
Permit higher turbine inlet temperatures achieving cycle efficiency benefits while lowering NO _x , CO, UHC and improving flame stabilizations	Improve performance and durability of thermal barrier coating-substrate materials	Enhance performance and efficiency while improving durability
<p>Four Sub-Areas of Work:</p> <ul style="list-style-type: none"> - lean premixed/instability experiments - advanced modeling - sensors and controls - catalytic combustion 	<p>Three Sub-Areas of Work:</p> <ul style="list-style-type: none"> - TBC modeling and durability experiments - New coating techniques - Life prediction and non-destructive evaluations 	<p>Four Sub-Areas of Work:</p> <ul style="list-style-type: none"> - internal cooling enhancement - external cooling flows - aero optimization - new design methods



EXPANDED OUTREACH ACTIVITIES

(Examples)

- **“Fact sheets” for each University project**
- **Interact with SEO**
- **Establish seminar series**
- **Coordinate/cooperate with EU**
- **All electronic report/web access**
- **Publish news releases**
- **Congressional notification of research awards**

DESIRED RESULT - OUTCOME

“Development of useful technology that result in lower energy consumption and fuel savings, electricity cost savings, emission reductions, increased system reliability, job creation, conservation of land and water resources.”